



SEQUENCE LISTING

<110> **Irene Mary Russell, Robyn Joyce Oakeshott, John Graham Sutherland, Tara Deane**

<120> **Expression System**

<130> **10/522,427**

<160> **41**

<170> **PatentIn version 3.3**

<210> **1**

<211> **30**

<212> **PRT**

<213> **Artificial Sequence**

<220>

<223> **Signal Sequence**

<400> **1**

Met Lys Lys Arg Arg Val Val Asn Ser Val Leu Leu Leu Leu Leu  
1 5 10 15

Ala Ser Ala Leu Ala Leu Thr Val Ala Pro Met Ala Lys Ala  
20 25 30

<210> **2**

<211> **46**

<212> **PRT**

<213> **Artificial Sequence**

<220>

<223> **Signal Sequence**

<400> **2**

Met Glu Ala Arg Met Thr Gly Arg Arg Lys Val Thr Arg Arg Asp Ala  
1 5 10 15

Met Ala Asp Ala Ala Arg Ala Val Gly Val Ala Cys Leu Gly Gly Phe  
20 25 30

Ser Leu Ala Ala Leu Val Arg Thr Ala Ser Pro Val Asp Ala  
35 40 45

<210> **3**

<211> **41**

<212> **PRT**

<213> **Artificial Sequence**

<220>

<223> **Signal Sequence**

<400> **3**

Met Ser Arg Ser Ala Lys Pro Gln Asn Gly Arg Arg Arg Phe Leu Arg  
1 5 10 15

Asp Val Val Arg Thr Ala Gly Gly Leu Ala Ala Val Gly Val Ala Leu  
20 25 30

Gly Leu Gln Gln Gln Thr Ala Arg Ala  
35 40

<210> 4  
<211> 27  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 4

Met Thr Trp Ser Arg Arg Gln Phe Leu Thr Gly Val Gly Val Leu Ala  
1 5 10 15

Ala Val Ser Gly Thr Ala Gly Arg Val Val Ala  
20 25

<210> 5  
<211> 27  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 5

Met Asp Arg Arg Arg Phe Leu Thr Leu Leu Gly Ser Ala Gly Leu Thr  
1 5 10 15

Ala Thr Val Ala Thr Ala Gly Thr Ala Lys Ala  
20 25

<210> 6  
<211> 37  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 6

Met Ser Glu Lys Asp Lys Met Ile Thr Arg Arg Asp Ala Leu Arg Asn  
1 5 10 15

Ile Ala Val Val Val Gly Ser Val Ala Thr Thr Thr Met Met Gly Val  
Page 2

20

25

30

Gly Val Ala Asp Ala  
35

<210> 7  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence  
<400> 7

Met Gln Ile Val Asn Leu Thr Arg Arg Gly Phe Leu Lys Ala Ala Cys  
1 5 10 15

Val Val Thr Gly Gly Ala Leu Ile Ser Ile Arg Met Thr Gly Lys Ala  
20 25 30

Val Ala

<210> 8  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence  
<400> 8

Met Asn Asn Glu Glu Thr Phe Tyr Gln Ala Met Arg Arg Gln Gly Val  
1 5 10 15

Thr Arg Arg Ser Phe Leu Lys Tyr Cys Ser Leu Ala Ala Thr Ser Leu  
20 25 30

Gly Leu Gly Ala Gly Met Ala Pro Lys Ile Ala Trp Ala  
35 40 45

<210> 9  
<211> 48  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence  
<400> 9

Met Ser Thr Gly Thr Thr Asn Leu Val Arg Thr Leu Asp Ser Met Asp  
1 5 10 15

Phe Leu Lys Met Asp Arg Arg Thr Phe Met Lys Ala Val Ser Ala Leu  
20 25 30

Gly Ala Thr Ala Phe Leu Gly Thr Tyr Gln Thr Glu Ile Val Asn Ala  
35 40 45

<210> 10  
<211> 50  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 10

Met Lys Cys Tyr Ile Gly Arg Gly Lys Asn Gln Val Glu Glu Arg Leu  
1 5 10 15

Glu Arg Arg Gly Val Ser Arg Arg Asp Phe Met Lys Phe Cys Thr Ala  
20 25 30

Val Ala Val Ala Met Gly Met Gly Pro Ala Phe Ala Pro Lys Val Ala  
35 40 45

Glu Ala  
50

<210> 11  
<211> 26  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 11

Met Asn Arg Arg Asn Phe Ile Lys Ala Ala Ser Cys Gly Ala Leu Leu  
1 5 10 15

Thr Gly Ala Leu Pro Ser Val Ser His Ala  
20 25

<210> 12  
<211> 44  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 12

Met Ser His Ala Asp Glu His Ala Gly Asp His Gly Ala Thr Arg Arg  
Page 4

1 5 10 15

Asp Phe Leu Tyr Tyr Ala Thr Ala Gly Ala Gly Thr Val Ala Ala Gly  
20 25 30

Ala Ala Ala Trp Thr Leu Val Asn Gln Met Asn Pro  
35 40

<210> 13  
<211> 44  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 13

Met Thr Gln Ile Ser Gly Ser Pro Asp Val Pro Asp Leu Gly Arg Arg  
1 5 10 15

Gln Phe Met Asn Leu Leu Thr Phe Gly Thr Ile Thr Gly Val Ala Ala  
20 25 30

Gly Ala Leu Tyr Pro Ala Val Lys Tyr Leu Ile Pro  
35 40

<210> 14  
<211> 32  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 14

Met Asp Arg Arg Thr Phe Leu Arg Leu Tyr Leu Leu Val Gly Ala Ala  
1 5 10 15

Ile Ala Val Ala Pro Val Ile Lys Pro Ala Leu Asp Tyr Val Gly Tyr  
20 25 30

<210> 15  
<211> 42  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 15

Met Thr Lys Leu Ser Gly Gln Glu Leu His Ala Glu Leu Ser Arg Arg  
1 5 10 15

Ala Phe Leu Ser Tyr Thr Ala Ala Val Gly Ala Leu Gly Leu Cys Gly  
20 25 30

Thr Ser Leu Leu Ala Gln Gly Ala Arg Ala  
35 40

<210> 16  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 16

Met Thr Leu Thr Arg Arg Glu Phe Ile Lys His Ser Gly Ile Ala Ala  
1 5 10 15

Gly Ala Leu Val Val Thr Ser Ala Ala Pro Leu Pro Ala Trp Ala  
20 25 30

<210> 17  
<211> 31  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 17

Met Thr Ile Ser Arg Arg Asp Leu Leu Lys Ala Gln Ala Ala Gly Ile  
1 5 10 15

Ala Ala Met Ala Ala Asn Ile Pro Leu Ser Ser Gln Ala Pro Ala  
20 25 30

<210> 18  
<211> 32  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 18

Met Ser Glu Ala Leu Ser Gly Arg Gly Asn Asp Arg Arg Lys Phe Leu  
1 5 10 15

Lys Met Ser Ala Leu Ala Gly Val Ala Gly Val Ser Gln Ala Val Gly  
20 25 30

<210> 19

<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 19

Met Lys Thr Lys Ile Pro Asp Ala Val Leu Ala Ala Glu Val Ser Arg  
1 5 10 15

Arg Gly Leu Val Lys Thr Thr Ala Ile Gly Gly Leu Ala Met Ala Ser  
20 25 30

Ser Ala Leu Thr Leu Pro Phe Ser Arg Ile Ala His Ala  
35 40 45

<210> 20  
<211> 35  
<212> PRT  
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<220>  
<223> Signal Sequence

<400> 20

Met Ser Asn Phe Asn Gln Ile Ser Arg Arg Asp Phe Val Lys Ala Ser  
1 5 10 15

Ser Ala Gly Ala Ala Leu Ala Val Ser Asn Leu Thr Leu Pro Phe Asn  
20 25 30

Val Met Ala  
35

<210> 21  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 21

Met Ser Ile Ser Arg Arg Ser Phe Leu Gln Gly Val Gly Ile Gly Cys  
1 5 10 15

Ser Ala Cys Ala Leu Gly Ala Phe Pro Pro Gly Ala Leu Ala  
20 25 30

<210> 22  
<211> 37  
<212> PRT

<213> Artificial Sequence

<220>

<223> Signal Sequence

<400> 22

Met Lys Thr Val Leu Pro Ser Val Pro Glu Thr Val Arg Leu Ser Arg  
1 5 10 15

Arg Gly Phe Leu Val Gln Ala Gly Thr Ile Thr Cys Ser Val Ala Phe  
20 25 30

Gly Ser Val Pro Ala  
35

<210> 23

<211> 44

<212> PRT

<213> Artificial Sequence

<220>

<223> Signal Sequence

<400> 23

Met Gly Arg Leu Asn Arg Phe Arg Leu Gly Lys Asp Gly Arg Arg Glu  
1 5 10 15

Gln Ala Ser Leu Ser Arg Arg Gly Phe Leu Val Thr Ser Leu Gly Ala  
20 25 30

Gly Val Met Phe Gly Phe Ala Arg Pro Ser Ser Ala  
35 40

<210> 24

<211> 50

<212> PRT

<213> Artificial Sequence

<220>

<223> Signal Sequence

<400> 24

Met Ser Asp Lys Asp Ser Lys Asn Thr Pro Gln Val Pro Glu Lys Leu  
1 5 10 15

Gly Leu Ser Arg Arg Gly Phe Leu Gly Ala Ser Ala Val Thr Gly Ala  
20 25 30

Ala Val Ala Ala Thr Ala Leu Gly Gly Ala Val Met Thr Arg Glu Ser  
35 40 45

Trp Ala

<210> 25  
<211> 32  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 25

Met Glu Ser Arg Thr Ser Arg Arg Thr Phe Val Lys Gly Leu Ala Ala  
1 5 10 15

Ala Gly Val Leu Gly Gly Leu Gly Leu Trp Arg Ser Pro Ser Trp Ala  
20 25 30

<210> 26  
<211> 27  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 26

Met Ser Leu Ser Arg Arg Gln Phe Ile Gln Ala Ser Gly Ile Ala Leu  
1 5 10 15

Cys Ala Gly Ala Val Pro Leu Lys Ala Ser Ala  
20 25

<210> 27  
<211> 30  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 27

Met Thr Leu Asn Arg Arg Asp Phe Ile Lys Thr Ser Gly Ala Ala Val  
1 5 10 15

Ala Ala Val Gly Ile Leu Gly Phe Pro His Leu Ala Phe Gly  
20 25 30

<210> 28  
<211> 45  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 28

Met Thr Asp Ser Arg Ala Asn Arg Ala Asp Ala Thr Arg Gly Val Ala  
1 5 10 15

Ser Val Ser Arg Arg Arg Phe Leu Ala Gly Ala Gly Leu Thr Ala Gly  
20 25 30

Ala Ile Ala Leu Ser Ser Met Ser Thr Ser Ala Ser Ala  
35 40 45

<210> 29

<211> 1155

<212> DNA

<213> Agrobacterium radiobacter

<400> 29

atgcaaacga gaagagatgc acttaagtct gcggccgcaa taactctgct cggcggcttg 60  
gctgggtgtg caagcatggc ccgaccaatc ggtacaggcg atctgattaa tactgttcgc 120  
ggcccccattc cagtttcgga agcgggcttc acactgaccc atgagcatat ctgcggcagt 180  
tcggcgggat tcctacgtgc gtggccggag ttttcggta gccgcaaagc tctagcggaa 240  
aaggctgtga gaggattacg ccatgccaaga tcggctggcg tgcaaaccat cgtcgatgtg 300  
tcgactttcg atatcggtcg tgacgtccgt ttattggccg aagttcgcg ggccgcccac 360  
gtgcataatcg tggcggcgac tggcttatgg ttcgacccgc cacttcaat gcgaatgcgc 420  
agcgtcgaag aactgaccca gttcttcctg cgtaaatcc aacatggcat cgaagacacc 480  
ggtatttaggg cggcattat caaggtcgcg accacaggga aggccacccc ctttcaagag 540  
ttgggtgttaa aggcagccgc gcggggccagc ttggccaccg gtgttccggc aaccactcac 600  
acgtcagcaa gtcagcgcga tggcagcagc caggcagccaa tatttgaatc cgaaggtttg 660  
agcccccac gggtttgtat cggcacagc gatgatactg acgatttgag ctacctaacc 720  
ggcctcgctg cgccgcggata cctcgctcggt ttagatcgca tgccgtacag tgcgattgg 780  
ctagaaggca atgcgagtgc attagcgctc tttggtactc ggtcggtggca aacaagggt 840  
ctcttgatca aggcgcctcat cgaccgaggc tacaaggatc gaatcctcgat ctcggatgac 900  
tggctgttcg ggttttcgag ctatgtcactg aacatcatgg acgtaatggc tcgcataaac 960  
ccagatggaa tggccttcgt ccctctgaga gtgatcccat tcctacgaga gaagggcgac 1020  
ccgcccggaaa cgctagcagg cgtaaccgtg gccaatcccg cgcgggttctt gtcaccgacc 1080  
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gataccgaac gatga 1155

<210> 30

<211> 384

<212> PRT

<213> Agrobacterium radiobacter

<400> 30

Met Gln Thr Arg Arg Asp Ala Leu Lys Ser Ala Ala Ala Ile Thr Leu  
1 5 10 15

Leu Gly Gly Leu Ala Gly Cys Ala Ser Met Ala Arg Pro Ile Gly Thr  
20 25 30

Gly Asp Leu Ile Asn Thr Val Arg Gly Pro Ile Pro Val Ser Glu Ala  
35 40 45

Gly Phe Thr Leu Thr His Glu His Ile Cys Gly Ser Ser Ala Gly Phe  
50 55 60

Leu Arg Ala Trp Pro Glu Phe Phe Gly Ser Arg Lys Ala Leu Ala Glu  
65 70 75 80

Lys Ala Val Arg Gly Leu Arg His Ala Arg Ser Ala Gly Val Gln Thr  
85 90 95

Ile Val Asp Val Ser Thr Phe Asp Ile Gly Arg Asp Val Arg Leu Leu  
100 105 110

Ala Glu Val Ser Arg Ala Ala Asp Val His Ile Val Ala Ala Thr Gly  
115 120 125

Leu Trp Phe Asp Pro Pro Leu Ser Met Arg Met Arg Ser Val Glu Glu  
130 135 140

Leu Thr Gln Phe Phe Leu Arg Glu Ile Gln His Gly Ile Glu Asp Thr  
145 150 155 160

Gly Ile Arg Ala Gly Ile Ile Lys Val Ala Thr Thr Gly Lys Ala Thr  
165 170 175

Pro Phe Gln Glu Leu Val Leu Lys Ala Ala Ala Arg Ala Ser Leu Ala  
180 185 190

Thr Gly Val Pro Val Thr Thr His Thr Ser Ala Ser Gln Arg Asp Gly  
195 200 205

Glu Gln Gln Ala Ala Ile Phe Glu Ser Glu Gly Leu Ser Pro Ser Arg  
210 215 220

Val Cys Ile Gly His Ser Asp Asp Thr Asp Asp Leu Ser Tyr Leu Thr  
225 230 235 240

Gly Leu Ala Ala Arg Gly Tyr Leu Val Gly Leu Asp Arg Met Pro Tyr  
245 250 255

Ser Ala Ile Gly Leu Glu Gly Asn Ala Ser Ala Leu Ala Leu Phe Gly  
260 265 270

Thr Arg Ser Trp Gln Thr Arg Ala Leu Leu Ile Lys Ala Leu Ile Asp  
275 280 285

Arg Gly Tyr Lys Asp Arg Ile Leu Val Ser His Asp Trp Leu Phe Gly  
290 295 300

Phe Ser Ser Tyr Val Thr Asn Ile Met Asp Val Met Asp Arg Ile Asn  
305 310 315 320

Pro Asp Gly Met Ala Phe Val Pro Leu Arg Val Ile Pro Phe Leu Arg  
325 330 335

Glu Lys Gly Val Pro Pro Glu Thr Leu Ala Gly Val Thr Val Ala Asn  
340 345 350

Pro Ala Arg Phe Leu Ser Pro Thr Val Arg Ala Val Val Thr Arg Ser  
355 360 365

Glu Thr Ser Arg Pro Ala Ala Pro Ile Pro Arg Gln Asp Thr Glu Arg  
370 375 380

<210> 31  
<211> 28  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 31

Met Gln Thr Arg Arg Asp Ala Leu Lys Ser Ala Ala Ala Ile Thr Leu  
1 5 10 15

Leu Gly Gly Leu Ala Gly Cys Ala Ser Met Ala Arg  
20 25

<210> 32  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 32

Met Lys Lys Arg Arg Val Val Asn Ser Val Leu Leu Leu Leu Leu  
1 5 10 15

Ala Ser Ala Leu Ala Leu Thr Val Ala Pro Met Ala Phe Ala Ala Gly  
20 25 30

Ser

<210> 33  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide

<400> 33  
gttcagccca tggctaaagc tgcagagcac ggatccgatc 40

<210> 34  
<211> 40  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide

<400> 34  
gatcggatcc gtgctctgca gcttagcca tgggctgaac 40

<210> 35  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Signal Sequence

<400> 35

Met Lys Lys Arg Arg Val Val Asn Ser Val Leu Leu Leu Leu Leu  
1 5 10 15

Ala Ser Ala Leu Ala Leu Thr Val Ala Pro Met Ala Phe Ala Ala Gly  
20 25 30

Ser

<210> 36  
<211> 33  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> signal sequence  
<400> 36  
Met Lys Lys Arg Arg Val Val Asn Ser Val Leu Leu Leu Leu Leu  
1 5 10 15  
Ala Ser Ala Leu Ala Leu Thr Val Ala Pro Met Ala Lys Ala Ala Glu  
20 25 30

His

<210> 37  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide

<400> 37  
catgtcgaca tggatccgt cgtt

24

<210> 38  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide

<400> 38  
catgaattct tattttgaa ctggtaa

27

<210> 39  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide

<400> 39  
gtctaaaggat ccatgaaaga agaactaaaa acc

33

<210> 40  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide

<400> 40  
gtctaaaagc ttttaccagt ttagctttag

30

<210> 41  
<211> 54  
<212> PRT  
<213> Artificial

<220>  
<223> Any naturally occurring amino acid, of which up to 3 of them may be absent.

<220>  
<221> MISC\_FEATURE  
<222> (2)..(11)  
<223> Any naturally occurring amino acid, of which up to 10 of them may be absent

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> Xaa is K or R

<220>  
<221> MISC\_FEATURE  
<222> (13)..(15)  
<223> Any naturally occurring amino acid, of which up to 3 of them may be absent

<220>  
<221> MISC\_FEATURE  
<222> (16)..(16)  
<223> Xaa is K or R

<220>  
<221> MISC\_FEATURE  
<222> (17)..(26)  
<223> Any naturally occurring amino acid, of which up to 10 of them may be absent

<220>  
<221> MISC\_FEATURE  
<222> (29)..(52)  
<223> Any naturally occurring amino acid, of which up to 9 of them may be absent

<220>  
<221> MISC\_FEATURE  
<222> (53)..(53)  
<223> Xaa is K or R

<400> 41

Met Xaa  
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Arg Xaa Xaa Xaa Xaa  
20 25 30

Xaa  
35 40 45

Xaa Xaa Xaa Xaa Xaa Ala  
50